IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Michael Fleisher, Maya M. Radzinski,
Richard L. Rowe and Thomas W. Grudkowski

Serial No.	:	10/825,558	Group Art Unit 3662
Filed	:	April 14, 2004	Examiner M. M. Barker
For	:	SURVEILLED SUBJECT PRIVACY IMAGING	

Mail Stop Amendment
Commissioner for Patents
P. O. Box 1450
Alexandria, Virginia 22313-1450

S i r :

DECLARATION UNDER § 1.131

We declare as follows:

1. We are the named inventors of the above-identified application.

2. Prior to December 8, 2003, the filing date of the patent application underlying U.S. Patent Application Publication No. US 2004/0080448 to Lovberg et al., we conceived of our invention in the United States, and diligently worked toward reducing our invention to practice. Our efforts, which took place in the United States, are demonstrated in part by attached Exhibits 1-8, which are discussed in more detail below.

3. Exhibit 1 is a first image of a mannequin wearing clothing, which conceals objects including a gun and a pair of scissors. The gun is located adjacent a right hip of the mannequin, while the pair of scissors is located adjacent a left hip of the mannequin.

The first image was produced by an imaging system as described in our application and generated prior to December 8, 2003.

4.   Exhibit 2 is a second image of the mannequin in Exhibit 1. The second image is a modified version of the first image that has a reduced resolution compared to the first image with subdued highlighting of, among other things, the gun and the pair of scissors of the mannequin. The second image was generated prior to December 8, 2003 as described in the application by applying a 5x5 kernel to the first image.

5.   Exhibit 3 is a third image of the mannequin in Exhibit 1. The third image is a modified version of the first image that also has a reduced resolution compared to the first image while more dramatically highlighting, among other things, the gun and the pair of scissors of the mannequin. The third image was generated prior to December 8, 2003 as described in the application by applying a 5x5 kernel configured to detect waviness in the first image.

6.   Exhibit 4 is an e-mail dated prior to December 8, 2003 from Michael Fleisher, Senior Image Processing Engineer of Safe-View, Inc., to Maya Radzinski, Vice President of Software Engineering of Safe-View, Inc, both of whom are named inventors of the above-identified application. Safe-View, Inc. is the assignee of the present invention. The e-mail discusses the generation of the second and third images in Exhibits 2-3.

7.   Exhibit 5 is a fourth image of the mannequin of Exhibit 1. The fourth image is a mask that corresponds to the general form of the mannequin shown in the first image in Exhibit 1. The fourth image was generated prior to December 8, 2003 using techniques described in our application.

8.   Exhibit 6 is an e-mail thread that includes e-mails dated prior to December 8, 2003 between Michael Fleisher, Senior Image Processing Engineer of Safe-View, Inc., to Maya Radzinski, Vice President of Software Engineering of Safe-View, Inc. As discussed above, both persons are named inventors of the above-identified application and Safe-View, Inc. is the assignee of the present invention. The lower e-mail further discusses the generation of the second and third images of Exhibits 2-3. The upper e-mail discusses the fourth image of Exhibit 5.

9.   Exhibit 7 includes page 23 of computer code, which includes commands adapted to be executed by a computer processor to create a two dimensional kernel, correlate the kernel with an image, and smooth a result of the correlation via further correlation with an averaging kernel. The code is saved under the file name "imglibFuncs.cpp," which is shown on the top of the page without the file name extension. Page 23 of the code was written prior to December 8, 2003.

10.   Exhibit 8 includes an image capture of a directory tree showing a file named "imglibFuncs.cpp," which contains the code used by the imaging system (a portion of which is shown in Exhibit 7), with a modified date of prior to December 8, 2003.

11.   Either individually or in various combinations, the images, the e-mails, the portion of the code, and the image capture of the directory tree, demonstrate our conception, and activities toward reduction to practice, of at least the following inventions:

a. A method including interrogating a subject, including a person, with electromagnetic radiation in a range of about 100 MHz to about 2 THz; generating,

from the interrogating, first image data representative of at least a portion of the person sufficient to produce a first image with a given resolution; modifying at least a first portion of the first image data in a first manner reducing the resolution of a corresponding portion of the first image; and displaying a modified image based on the modified portion of the first image data.

b. An imaging system including an antenna assembly including at least a first antenna apparatus, each antenna apparatus configured to transmit toward and receive from a subject, including a person and any discernable objects with the person, in a subject position, electromagnetic radiation in a frequency range of about 100 MHz to about 2 THz, from positions spaced from the subject position, the antenna assembly producing an image signal representative of the received radiation; and a controller adapted to produce from at least a first portion of the image signal first image data corresponding to a first image of at least a portion of the subject having a first resolution, and to modify at least a first portion of the first image data in a first manner reducing the resolution of a corresponding portion of the first image.

c. An imaging system including means for interrogating a subject, including a person, with electromagnetic radiation in a range of about 100 MHz to about 2 THz; means for generating, from the interrogating, first image data representative of at least a portion of the person sufficient to produce a first image with a given resolution; means for modifying at least a first portion of the first image data in a manner reducing the resolution of a corresponding portion of the first image; and means for displaying a modified image based on the modified portion of the first image data.

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d. One or more storage media having embodied therein a program of commands adapted to be executed by a computer processor to receive an image signal generated in response to an interrogation of a subject, including a person and any objects carried by the person, with electromagnetic radiation in a range of about 100 MHz to about 2 THz; generate, from the received image signal, first image data representative of at least a portion of the person sufficient to produce a first image with a given resolution; and modify at least a first portion of the first image data in a manner reducing the resolution of a corresponding portion of the first image.
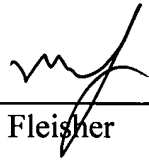
12.   Either individually or in various combinations, the Exhibits demonstrate our conception, and activities toward the reduction to practice of additional features of the aforementioned inventions, such as generating first image data having picture elements with different levels of intensity, reducing the number of different levels of intensity, and determining a new intensity level of a given picture element as a function of intensity levels of each picture element in a grid of at least five adjacent columns and rows of picture elements containing the given picture element.

13.   Diligence in our efforts toward the reduction to practice of the aforementioned inventions from a time earlier than December 8, 2003 to the reduction to practice of the inventions is demonstrated, in part, by the filing of the above-identified application on April 14, 2004.

14.   We declare that all statements made herein of our knowledge are true and that all statements made on information and belief are believed to be true. These statements were made with the knowledge that willful false statements and the like so made are

punishable by fine or imprisonment or both under § 1001 of Title 18 of the United States Code. We understand that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date:___10/11/2006___   _____

                                Michael Fleisher

Date:_____   _____

                                Maya M. Radzinski

Date:_____   _____

                                Richard L. Rowe

Date:_____   _____

                                Thomas W. Grudkowski

punishable by fine or imprisonment or both under § 1001 of Title 18 of the United States Code. We understand that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date:_____

    _____

Michael Fleisher

Date: Oct 1℉, 2006.

    _____

Maya M. Radzinski

Date:_____

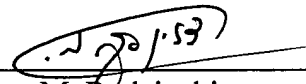   _____

Richard L. Rowe

Date:_____

    _____

Thomas W. Grudkowski

punishable by fine or imprisonment or both under § 1001 of Title 18 of the United States Code. We understand that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date:_____   _____
                                    Michael Fleisher

Date:_____   _____
                                    Maya M. Radzinski

Date:___10 - 16 - 06_____   _____
                                    Richard L. Rowe

Date:_____   _____
                                    Thomas W. Grudkowski

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punishable by fine or imprisonment or both under § 1001 of Title 18 of the United States

Code. We understand that such willful false statements may jeopardize the validity of the

application or any patent issuing thereon.
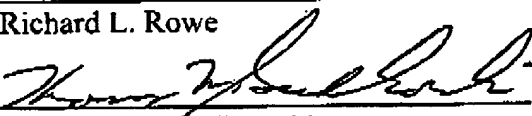
Date:_____   _____
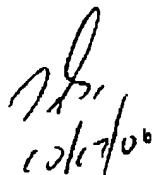   Michael Fleisher

Date:_____   _____
                                        Maya M. Radzinski

Date:_____   _____
                                        Richard L. Rowe

Date:___10/17/06_____   _____
                                        Thomas W. Grudkowski

File   Edit   View   Favorites   Tools   Help

Back ▾

Address ⌐ H:\Src nov 11\imglib\cpp

Search   Folders   ⌐ ▾

Go

Folders ✕

Name	Size	Type	Date Modified
CVS		File Folder	
#Histogram.cpp.1.3	10 KB	3 File	
#imglib_prnl.cpp.1.2	58 KB	3 File	
#imglibFuncs.cpp.1.3	20 KB	3 File	
ComponentProperties.cpp	1 KB	C++ Source	
CooccurenceMatrix.cpp	5 KB	C++ Source	
Equivalence.cpp	1 KB	C++ Source	
Histogram.cpp	12 KB	C++ Source	
imglib.cpp	1 KB	C++ Source	
imglib_prnl.cpp	60 KB	C++ Source	
imglib_util.cpp	1 KB	C++ Source	
imglibFuncs.cpp	86 KB	C++ Source	
Kernel.cpp	11 KB	C++ Source	
mem_util.cpp	7 KB	C++ Source	
ThresholdHistogram.cpp	3 KB	C++ Source	

My Computer
3½ Floppy (A:)
Local Disk (C:)
Apps on 'Dc1' (F:)
Engineering on Dc2-backup' (G:)
mfleisher on 'dc1\home' (H:)
.idenc
Back up Aug 26 03
Back up Aug 27 03
Back up Aug 28 03
Back up Aug 29
Back up Sep 02 03
Back Up Sep 03 03
Guardian
Hp oct 02
Hp oct 8
Hp oct 9
Hp sep 16
Hp sep 18
Hp sep 19
Hp sep 22
Hp sep 23
Hp sep 25
PNNL_Code_Exec_Paul
Src Dec 04
src Dec 26
Src Jan22
Src nov 03
Src nov 10
Src nov 11
bib
CVS
Hp
imglib
cpp
CVS
Include
Include
train
use_lib
Src nov 20
Src nov 24
Src oct 24
Src oct 28
Src Oct 30
Src oct 31
Images(Restricted) on Dc2-backup' (K:)
TSLScanDocs on 'Netdata' (L:)
Images on Dc2-backup' (M:)
Public on Dc2-backup' (P:)

Exhibit 8

```
long width = float_buff_pool.m_width;
long height = float_buff_pool.m_height;

if(width < 1 || height < 1)
        return HIP_DIM_ERR;


float* bufferIn;
float* bufferOut;

ret_val = float_buff_pool.GetBufferFromKey(&bufferIn, buffer_in_key);
HIP_CHECK;

ret_val = float_buff_pool.GetBufferFromKey(&bufferOut, buffer_out_key);
HIP_CHECK;

float Kernel[NFILTER_DIM1 * NFILTER_DIM2]; // This is a maximal kernel size.
int nDim1, nDim2;
nDim1 = (nFilter1 > 2) ? 5 : 3;
nDim2 = (nFilter2 > 2) ? 5 : 3;


        ret_val = OuterProduct(FILTERS[nFilter1], FILTERS[nFilter2], Kernel, nDim1,
nDim2);
        HIP_CHECK;

        ret_val = BufferKernelCorrelation(bufferIn, bufferOut, Kernel, nDim1, nDim2,
NULL);
        HIP_CHECK;

        float AveragingKernel[MAX_AVERAGE_KERNEL_SIZE * MAX_AVERAGE_KERNEL_SIZE];
        float* pAv = AveragingKernel;
        float denominator = 1.0f / nAverageSize / nAverageSize;
        for(int n = 0; n < nAverageSize * nAverageSize; ++n)
                *pAv++ = denominator;


        memcpy(bufferIn, bufferOut, width * height * sizeof(float));
        ret_val = BufferKernelCorrelation(bufferIn, bufferOut, AveragingKernel,
nAverageSize, nAverageSize, NULL);
        HIP_CHECK;

        return HIP_NO_ERR;

}

/*
        Function name:  HIPFrameTobuffer
        Date:
        Author:                 Michael Fleisher
        Purpose:                Copy a frame into a float linear buffer. Streches
the buffer to fit within
                                replacement values if narrower than frame
extremes.
        Inputs:                 pFrameIn - Input image frame.
                                fMinReplacement, fMaxReplacement - Define
the streching interval.
                                bDoStreching - true if streching desired.
        Outputs:                buffer - The filled buffer, allocated by the
function if needed. Usually should be in
                                one of the buffer pools.
```

Exhibit 7

From: Michael Fleisher [Michael.Fleisher@L-3Com.com]
Sent: Sunday, ███████████ 6:03 PM
To: Maya Radzinski
Subject: RE: Privacy presentation and some..

Attachments: avqfrm55_prv_fil_2.bmp
Hi,

I thought this representation may be better since there is no need to dilate, and therefore distort, the outline of the body. Also, there is a significant gain in time since it is a simple, separable, linear kernel applied on the image. In fact, it is fairly easy to get a mask (I kept playing with various parameters), as you will see from the attached.

Your thought of the "seed" approach is an excellent direction to look in. We can actually "intersect" the region of interest which was obtained via the work already done (the SAR morphology approach) with the thresholded textural energy feature image seeds. Another step forward would be to use this intersection to narrow down the suspicious areas and classify that using further feature extraction.

In short, this does look very promising ☺

Michael

Michael Fleisher

Senior Image Processing Engineer.
SafeView, Inc., www.safe-view.com
469 El Camino Real, Suite 110, Santa Clara, CA 95050
(408) 961-3707 Office
(408) 420 8460 Cell

michael@safe-view.com

-----Original Message-----
From: Maya Radzinski
Sent: Friday, ██████████████ 6:25 PM
To: Michael Fleisher
Subject: RE: Privacy presentation and some..

Do you mean that we would have this image instead of a flat mask? Will we display the original raw data of the suspected object on top of this image? If so, I have no issue with that even though I am not sure why this is better than a mask... Am I missing anything?

The second image looks quite promising. It seems that the objects are indeed of higher values. The fact that the face is shown as an object tells me that this could be a pretty good direction. It would be interesting to see what you get if you apply a 90-95% threshold, get some "seeds". If the number of "seeds" is larger than X (X=3, 5?) this could be considered as a potential object. Well, maybe we need to play with these features... Bottom line, looks extremely interesting.

BTW, I browsed through the last svm paper you sent me – it definitely looks something worth while reading ☺

Shabbat Shalom,

Maya

Exhibit 6

Maya Radzinski
VP, Software Engineering
Safe-View, Inc., www.safe-view.com
469 El Camino Real, Suite 110, Santa Clara, CA 95050
(408) 961-3700 Office
(650) 799-3446 Cell

-----Original Message-----
From: Michael Fleisher
Sent: Friday, ███████████ 5:32 PM
To: Maya Radzinski
Subject: Privacy presentation and some..

Hi Maya,

What do you think of the first image (avqfrm55_prv_fil.bmp) as a privacy presentation background?

The second image is one generated by a new feature (something called "textural energy").
This is a fairly reach family of features. Some of them are a good transformation for privacy (I think) and others tend to show higher values in areas such as the gun and the scissors. I tried to play with various levels of threshold and the points near the gun and scissors came out in the top percentile.

Anyway, I just wanted to "hit" you with some good news.

Have a great weekend.

Michael

Michael Fleisher

Senior Image Processing Engineer.

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Exhibit 4